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Information Management: A Departmental Strategic Analysis, Naval Hospital Jacksonville, FL

A Graduate Management Project Presented to:

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In partial fulfillment of requirements for the

Army-Baylor Graduate Program in

Health and Business Administration

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Abstract

A successful IM department must have clear goals and direction that may be accomplished through the use of a strategic plan. This strategic management plan analyzes the Information Management (IM) department at Naval Hospital Jacksonville Florida. This plan proposes and outlines a strategy implementation plan to include goals, objectives and action steps that the department should implement over the next two to three years. Individual directional strategies for the IM department are not the goal of this project; rather, it is to achieve the ultimate goal of supporting the directional strategies already in place by Naval Hospital Jacksonville Florida. This project details every aspect of the IM department from its staffing levels to the plethora of daily functions. The gathered information is then applied to several professional strategic tools such as Porters Five Forces, the Stakeholder Analysis, Trends Issues Plot and a Value Chain analysis to name a few. Furthermore, the strategically gathered information is utilized to create the adaptive and implementation strategies through the use of strategic thinking maps which allow for the creation of attainable goals, objectives and actions steps for the IM departmental staff.

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Disclaimer

The opinions or assertions expressed in this paper are those of the author and are not to be construed as reflecting the official policy or position of Baylor University, U.S. Army Medical Command, Naval Hospital Jacksonville, Department of the Army, Department of the Navy, Department of Defense, or the U.S. Government.

Ethical Considerations

No personal identifying information was used during this study. The author declares no conflict of interest or financial interest in any product or service mentioned in this paper.

Table of Contents

List of Tables

List of Figures

Appendices

Introduction

Information Systems organizations cannot alter many of the internal forces or control the external forces that affect them, but they can control the way in which they deal with those forces (Ambrose & Morello, 2004). Information Technology (IT) leaders, particularly Chief Information Officers (CIO's), have multiple constituencies. Not only must they manage IT staff and deliver reliable IT services and projects, they must quickly come to grips with the expectations of business unit heads and technology service providers, and create new strategic initiatives (Roberts & Mahoney, 2005). Strategic initiatives and plans are becoming more and more common in today's quickly developing Information Management Departments. It is not difficult to understand how a strategic analysis, even one performed within a few days rather than weeks can be beneficial to an Information Management (IM) department.

Strategic planning has many definitions. Kitzis and Gerrard mention how strategy when simply defined, is how to deploy resources to generate maximum value for stakeholders (2008). The creation of an IT strategic plan represents the process of defining IT initiatives and allocating IT resources for the maximum benefit to the enterprise; it tells people where IT is going and how (Rosser, 1997). The classic content of a strategic

plan includes: a vision, where to go or simply a picture of what it should be like; the strategy, how to get there; and implementation, what to do to get it there (Rosser).

Derek Slater of CIO Magazine observes, given the several complexities, many CIOs have apparently responded to the forces of chaos by throwing in the towel on strategic planning (2002). Bensaou and Earl echo a similar sentiment in that a lot of western companies have abandoned the idea of a long-term Information Systems (IS) planning process altogether (1998). Another U.S. based survey showed that 39% of respondents had no formal IT strategy at all (Slater, 2002). However, Slater believes that such chaotic times make it more necessary than ever for the CIO to routinely take a strategic view (2002). The following quote from a McLean Report at InfoTech.com (2006) provides one of the best arguments for an IM/IT Strategic Plan:

> Many small and mid-sized enterprises (SMEs) do not have a documented IT strategy, let alone an IT strategic plan. Typically, CIOs do not have the time or the resources to develop one, and they generally can keep an inventory of the department's resources and IT projects in their heads. To those CIOs, the benefits of developing a strategy and plan are not sufficient to cover the cost of the weeks of effort

typically required by most definitions of an IT strategy. However, a simple IT strategic plan, one implemented in days or even hours, can provide immediate payback for organizations of any size.

Health care Information Management/Information Technology (IM/IT) is more than just a mere extension of the past. Not only is change inevitable, but if the past is any indication of how fast technology is advancing each day, then IM/IT departments need to be prepared for the future. Gone are the days when the responsibilities of the IM department were to simply maintain a few email accounts or simplistic patient databases. Health care facilities are no longer satisfied with just a few clinical systems in place to assist with patient care. In today's quickly evolving technological environment, with a computer on nearly every desk or attached to nearly every piece of medical equipment, health care IM/IT departments need to be strategically prepared for the future.

Technology is implemented every day allowing health care providers to deliver quality health care to beneficiaries. New information technology allows health care facilities to be more productive, increase efficiency and do more with less. The revolution in Information Technology (IT) is commonly taken as the initiating force behind the acceleration in productivity

seen since 1995. The IT revolution has not simply enhanced assembly-line production but has also opened the possibility of fundamentally altering the way production takes place. Productivity, as measured by the amount of work performed within a given timeframe, is often equated with cost: if businesses could deliver a job at half the cost, many would conclude that the organization had doubled its productivity (Moxley, et al, 2008).

Computer based technologies are associated with almost every aspect in the health care arena. When it comes to clinical health information technology, most VA and Department of Defense (DoD) hospitals are well ahead of the civilian health care industry. For example, computerized physician order entry systems, which automate lab and prescription orders, have long been commonplace at military health facilities (Buxbaum). Programs and databases requiring many switches, routers and massive servers are created and relied upon daily to assuage the workload on health care providers, clinical technicians, and administrators throughout the health care facility. Medical records, whether inpatient or outpatient, are becoming paperless and placing more dependence on IM departments. The advances in today's IM/IT fields assist more than just the staff of a health care facility. The health care facilities customer's benefit as well when they are afforded the opportunity to order

prescriptions and make appointments online. The benefits are felt at every departmental level; pharmacy operations have improved; lab testing processes have been automated and the surgical theater is a technical marvel (Buxbaum).

Statement of the Problem

All departments, customers and stakeholders in the health care facility benefit from technology innovation. IM/IT departments must avoid becoming stagnant in their everyday operations. They must make every attempt possible to keep up with these evolving times and provide customers with these innovations. An IM department must develop a set of objectives or strategies to follow. A successful IM department must have clear goals and direction that may be accomplished through the use of a strategic plan.

Purpose Statement

The purpose of this study is to present a comprehensive strategic assessment of Information Management (IM) department operations for Naval Hospital Jacksonville, Florida. This project will include findings and recommendations relative to the classic Information Technology (IT) categories of people, process, and technology. A strategic approach will allow for comparisons to industry standards and recommended best-practices. Additionally, while this study focuses on Information

System (IS) operations, any observations beyond IS operations that benefit the organization will be annotated as such.

Organizing the Strategic Planning Process

This project focuses on the Information Management department at Naval Hospital Jacksonville, a unique health care organization with distinguishing characteristics. Such attributes must be taken into consideration when analyzing this type of facility:

- They are a 501(C)(3), not for profit organization
- They are a closed panel, non-competitive health care organization
- It is federally owned by the Department of Defense (DoD)
- It is classified as a Military Treatment Facility (MTF) and only provides health care to select beneficiaries

As a military treatment facility, the specific external analysis will focus on Naval Hospital Jacksonville itself while the internal analysis will focus upon the Information Management Department in more detail.

Naval Hospital Jacksonville History

The original Naval Hospital was a multiple barracks-type structure commissioned in 1941 which was later expanded in 1943

to a bed capacity of 600 for WWII commitments (Public Affairs, 2008). Although originally designed to provide inpatient care to over 400 patients, as modern medicine shifted from inpatient to outpatient care, so did the facility. In 1989, a $19,000,000 outpatient service addition was constructed which included space for most outpatient primary and specialty clinics (Public Affairs). In 2004, Naval Hospital Jacksonville incorporated the Naval Dental Centers and its Branch Medical Clinics (BMC's) were renamed to Branch Health Clinics (BHC's) to reflect the re-alignment. Naval Hospital Jacksonville supports the following Branch Health Clinics: BHC Albany, BHC Athens, BHC Atlanta, BHC Jacksonville, BHC Kings Bay, BHC Key West and BHC Mayport.

Naval Hospital Jacksonville Today

Today, Naval Hospital Jacksonville is an eight story building with 361,000 square feet and 60 inpatient beds. The hospital is fully accredited by The Joint Commission (TJC) and is known for having the Navy's largest Family Physician Training Program. The beneficiary population for the hospital and its seven branch clinics is about 243,000 (Public Affairs, 2008). The hospital's 2300 personnel provide common specialties, including: family medicine, internal medicine, surgery, obstetrics, gynecology, psychiatry, radiology, ophthalmology, urology, pediatrics, ear, nose and throat, oral surgery,

neurology, orthopedics, and emergency medical care (Public Affairs). The facility is currently undergoing a major military construction (MILCON) project consisting of 75,000 additional square feet that will include a new physical therapy clinic, command suite, and renovated operating rooms.

Naval Hospital Jacksonville is defined and guided by specific mission and vision statements. The hospital's mission, vision, and guiding principles follow (Public Affairs, 2008):

Mission Statement

We are a service organization! We provide operational support, promote wellness, and deliver quality health care to all those entrusted to us, anytime, anywhere.

Vision

First in Service! Through Readiness, Staff Development, and Family Centered Care, we will be the Most Efficient Organization.

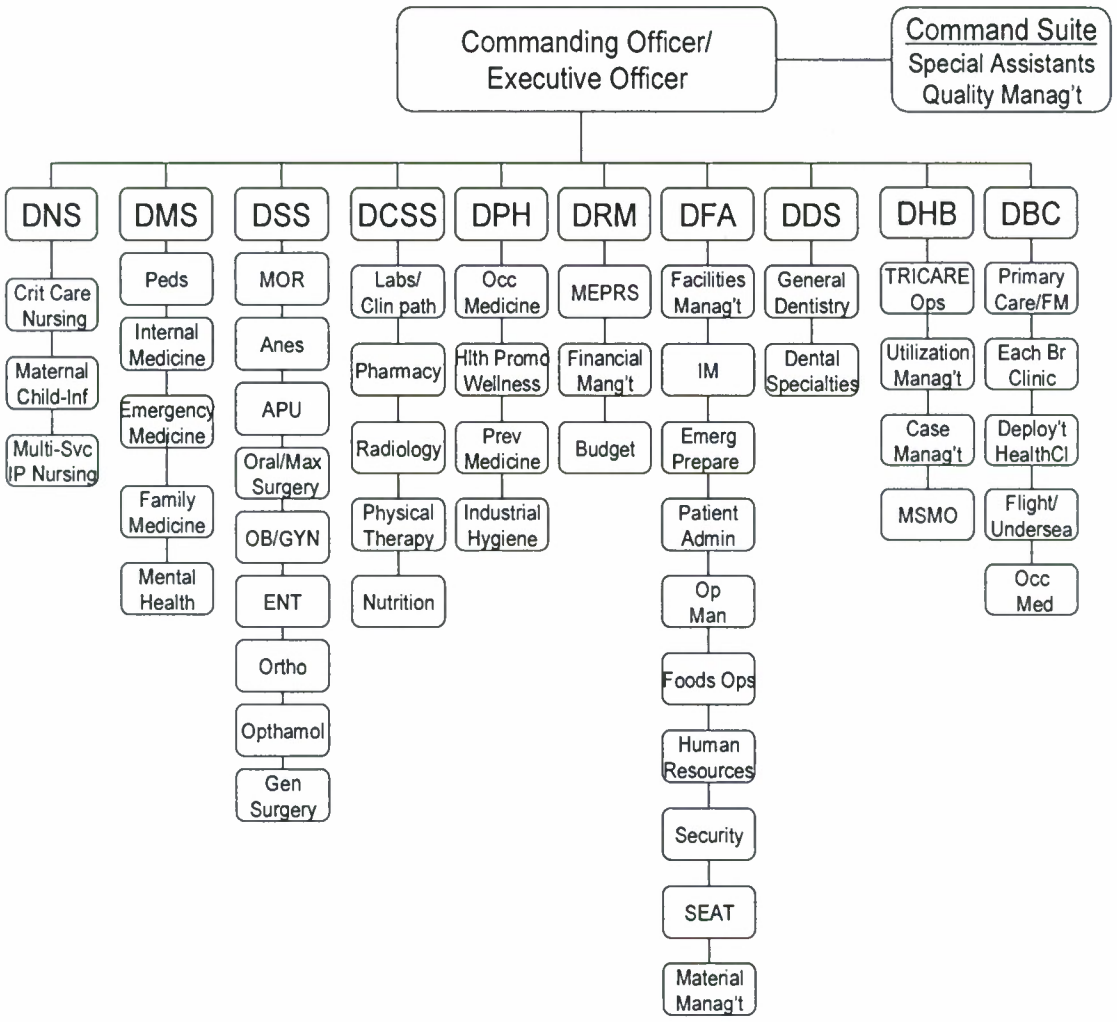
Guiding Principals / Goals

1) Supporting Operational Readiness
2) Patient Centered Quality Health Care
3) Focusing on Staff
4) Promoting Sound Business Practice

Organizational Chart

Naval Hospital Jacksonville's command organizational chart follows:

Figure 1. Naval Hospital Jacksonville Florida's Organizational Chart



Departmental Overview

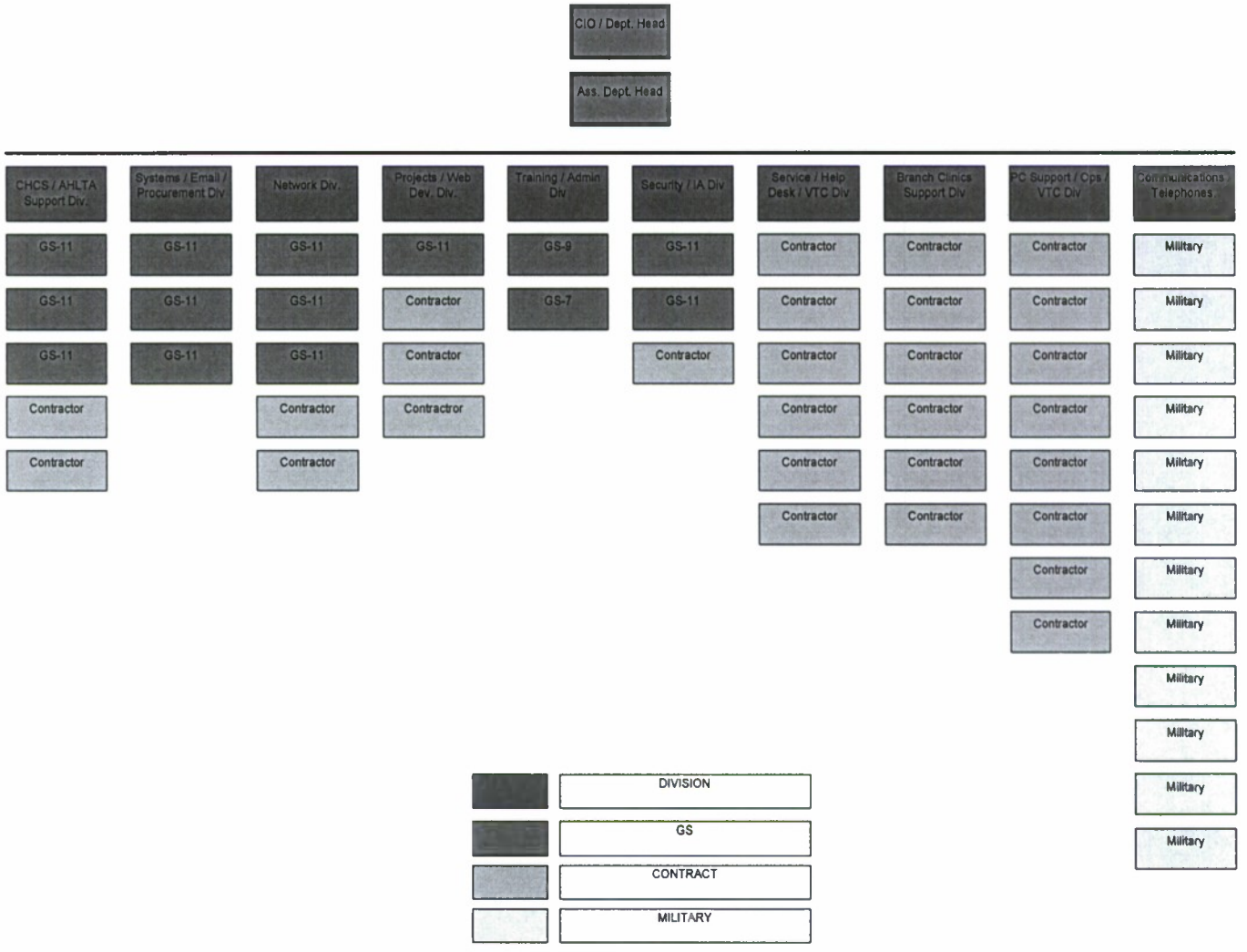
Keeping the previously performed analysis in mind which depicts the industry (health care), and the size of the health care facility supported as well as its customers and stakeholders, this section focuses on the structure of the IM department, its staff, current projects, programs supported and their role in the organization.

Information Management Staff

The number of staff and their roles and responsibilities are important to understanding the internal environment, as organizational awareness provides the background necessary to conduct a strategic analysis. The current number of staff, referred to as full time equivalents (FTE's), is 56. The IM department's staff can be broken down into job specific roles and responsibilities. Figure 2 illustrates the IM department's organizational chart. This chart details the departments individual divisions (currently ten), and the number and type of staff under each division. These different divisions and the staff which comprise them must interact at several different levels throughout various times in a standard work day. It is important to note that although certain divisional roles and responsibilities may be similar, there are also several roles

and responsibilities that cannot be replicated by other divisions due to the differentiation in the training.

Figure 2. Current MID Staffing Organizational Chart



The personnel structure is comprised of 12 military, 16 General Schedule (GS), and 27 contract personnel. The cost for these personnel can be broken down by each group. Military and GS

estimates are more accurate than contract personnel as the contract personnel may vary significantly each year depending on the contractor chosen and the amount of the bids and quotes provided to the government.

Military (Enlisted staff):	12
Government Service (GS):	16
Contract Staff:	28
Actual Total FTE's	56

The cost of staff for the IM department varies depending on the skill level, job roles and responsibilities of the individual. Government Schedule (GS) personnel job roles are determined by their Position Description (PD). The position description is the document which describes the civil service staff's roles and responsibilities. The contracted staff work under the scope of a performance based contract. This contract is a negotiated cost for a determined set of job requirements for a definitive amount of time. The breakdown of staff costs can be seen below:

- Military Enlisted = 12 @ $75,000 yr; Total: $900,000.00
- GS-13 Personnel = 2 @ $88,028 yr; Total: $176,056.00
- GS-11 Personnel = 12 @ $61,760 yr; Total: $741,120.00
- GS-09 Personnel = 01 @ $51,048 yr; Total: $51,048.00

- GS-07 Personnel = 01 @ $41,729 yr; Total: $41,729.00
- Contract Personnel = 28 @ $1,979,665.00 Total: $1,979,665.00
- Total yearly cost of IMD staff = **$3,889,618.00**

Information Management Systems, Responsibilities and Projects

Staff responsibilities within Information Management are numerous. To simplify the explanation of these, they will be categorized into three different portfolios: 1) Systems Supported, 2) Job Responsibilities and 3) Special Projects.

Portfolio (1) Systems Supported:

Appendix A is a comprehensive list of Portfolio 1; systems supported by the Information Management Department at Naval Hospital Jacksonville. This portfolio is comprised of systems which most Naval MTF's support and manage although they may not necessarily be developed internally. Although some are unique to Naval Hospital Jacksonville, the majority of these systems are common throughout all Naval MTF's and most are considered essential for everyday tasks involved in the delivery of health care and health care administration. There are more than 40 systems supported by the Information Management department at Naval Hospital Jacksonville. The list includes applications and software that are essential to the delivery of health care such as Electronic Medical Record (EMR) programs; the Composite

Health Care System (CHCS) and AHLTA are a couple examples of these mission critical programs in portfolio 1. This portfolio also includes many applications that indirectly affect patient care such as supply ordering programs and human resource management tools; the Defense Medical Logistics Standard Support (DMLSS) program and the Defense Medical Human Resource System Internet (DMRSHI) are a couple of these programs.

The duties involved in support of this portfolio and these systems are numerous and depend on the system itself. Although it may seem that once installed these systems can support themselves, this is not anywhere near the case. Many of these systems require design, implementation and programming while others require continuous software updates, patches and revisions. In almost all cases, this portfolio of software programs requires some type of daily maintenance, user education and inevitable troubleshooting when a customer experiences a problem. Another important duty within this portfolio and which all of the software programs require is careful life-cycle management.

Portfolio (2) Job Responsibilities:

Job and staff responsibilities other than the maintenance and support of the above systems are plentiful as well. Although these services may have different names and scopes depending on the MTF, they must exist in order for an IM department to

survive. The size of the MTF determines the workload and staff required to maintain these responsibilities. The scope of this portfolio is in addition to those required in portfolio 1. Some examples of these responsibilities include:

1) **Telephone Services:** NH Jacksonville's IM department manages all telephone services as well as military message traffic for the command.
2) **Server Support and Maintenance:** NH Jacksonville's IM department currently maintains 140 Servers. This number continuous to grow with the implementation of new software programs and electronic health record requirements. Many of the programs used by the hospital reside on these servers therefore adding server maintenance to this category.
3) **Switches, Routers and Firewalls:** NH Jacksonville's IM department currently maintains approximately 210 switches and routers for everyday systems operations.
4) **Security / Information Awareness (IA):** Responsibilities include but are not limited to hospital information security policy, information security awareness, new employee indoctrination, data confidentiality issues, individual accountability issues, password control issues, data and software access control, equipment and resource usage, information security violation reporting,

unauthorized software use and piracy issues, virus detection / eradication issues and internet access.

5) **Personal Computer (PC) Replacement and Upgrades:** Entails all tasks associated with the End User Devices (EUD's) when the life-cycle expectancy is reached or soon to be reached. Currently there are more than 2,800 EUD's, all of which have staggered life-expectancies, therefore always requiring technicians and staff to perform upgrades or replacements throughout a calendar year. This is a never ending process for any well maintained IM department. A typical PC life-cycle is currently four years per the Military Health System (MHS) standards.

6) **EUD Patches and Upgrades:** This service includes additional life-cycle demands such as license and maintenance renewals not already included in portfolio (1).

7) **Technical PC Support Services / Help Desk:** Customer Service Requests (CSR's) are placed via the Command Intranet webpage or via phone directly to MID staff in cases when the customer may not have Intranet access or the issue requires immediate action due to patient impact. CSR's are prioritized based on user description of the problem and Patient Impact answered "Yes or No" during the CSR input process. The CSR is then assigned to the appropriate MID group or individual based on problem type and customer

description. The customer also receives an e-mail notification when the CSR is assigned, re-assigned, updated or closed. Upon closure of the CSR, the customer receives a notification with closure comments from the assigned IM staff. At this time the customer has the option of providing feedback on their customer service experience with MID. All negative feedback is assigned to the appropriate MID manager for action and direct follow-up with the customer. Positive feedback is also sent to management for their information only and no follow-up required.

8) **Training / Administrative tasks:** Includes the ordering of supplies for the IM department as well as training to NH Jacksonville staff.

9) **Video Tele-Conferences (VTC)** - The IM department has dedicated staff which supports the command in any requested VTC's. This allows the Naval Hospital to communicate with its seven outlying clinics and their higher echelon.

10) **Interactive Customer Evaluation (ICE) Kiosks:** These ICE Kiosks are used to gather customer comments regarding their visit at Naval Hospital Jacksonville. These systems help the facility collect patient feedback and improve in any areas it may need.

11) **Miscellaneous:** Additional staff responsibilities not listed includes the maintenance of the commands internet café, enterprise network deployments, data encryption solutions, and even a new unified messaging system which converts emails to voice mails and / or voice mails into emails so that a member can obtain their messages through various different methods while away from their desk.

Portfolio (3) Special Projects:

In addition to the above systems and responsibilities, the IM department staff has the following ongoing projects in place which assist with everyday operations in the delivery of health care. Some examples in this portion of the portfolio follow:

1) **Applications Development:** This team of IM staff collects external and custom information from major systems such as CHCS, AHLTA, M2 and the SharePoint databases and incorporates the information into a Structured Query Language (SQL) Server internal database. Once information is assimilated, it is used to support several essential projects and services for NH Jacksonville. An example of one of these projects is the **Emergency Department Patient Tracking System (EDPTS)**. This is an electronic version of the whiteboard seen in many emergency departments (ED).

This emergency department patient tracking system organizes patient flow by including provisions for the assignments of beds, physicians, nurses, and corpsmen. This system also allows for a rapid patient assessment and provides an electronic layout of ED rooms from which staff can easily determine how long a patient has been in a room, if a room is reserved for an expected incoming patient, and whether a patient is awaiting lab or other results. Patient and lab information is accessed directly from CHCS using Cache' client components. These are just a few of the features found within the EDPTS service that the IM department provides and maintains. A few of the other vital applications provided by this team include:

a. **Clinical Portal**

b. **Operation Data Store (ODS)**

c. **Awards / Peer Review**

d. **E-Ticket**

e. **Check-in / check-out Databases**

Appendix B provides a comprehensive list of systems and data warehouses maintained by the applications development team.

2) **VOCERA:** This is a wireless device which connects via the network and can tie into the telephone system. The system allows for instant staff-to-staff and patient-to-staff communication. Additionally, the device is capable of

narrowing message traffic to a particular group, as with a code blue or security team. For example, rather than announcing a code blue over the hospital intercom for everyone to hear, the device ensures only code blue team members receive the message.

3) **Tablet Personal Computers (PCs) for Providers:** Tablet PCs look and act just like standard laptops, yet the devices are capable of voice and handwriting recognition. These are yet another service provided to clinicians allowing for increased productivity and efficiency. The handwriting recognition is provided through Microsoft tablet software. With this software, the provider can take notes directly onto the tablets screen with a stylus and rather than having to take the time to type up the notes, the software can directly convert it into a typed format usable in any word processing software. The voice recognition software provided with their tablets is called Dragon Naturally Speaking. The Dragon software is specifically designed for use with medical terminology. Once the provider speaks into the tablet, they can use the software to transform verbal communication into text which interfaces with the hospitals widely used EMR called AHLTA. Another impressive feature of the tablets is the

ability for the provider to carry it with them from room to room utilizing the hospitals secured wireless networks therefore being able to take notes directly from the bedside. The tablets can also be used in the same manner away from the hospital allowing the providers secure access to all the same systems as if they were sitting in the hospital.

4) **Fortress Secure Client:** This software adds a layer of electronic protection allowing wireless networks to maintain required security. With this software, the previously mentioned tablets can connect to any wireless network yet still maintain security regulations when accessing medical software programs.

5) **Patient laptops:** Laptops are issued to patients for personal use. Patients may access private email with any mail protocol they may choose, as when sending pictures of a newborn to family and friends. This feature runs off a commercial wireless network separate from the internal DoD system.

6) **Real Time Location Services (RTLS):** The Ekahau RTLS system is a convenient medical equipment tracking mechanism

connected to: IV Pumps, wheel chairs, patient laptops, and other devices. RTLS assists clinical and maintenance personnel locate equipment, thus: reducing man hours spent searching for items; increasing productivity, as with biomedical repair; and decreasing the tendency to stockpile equipment.

7) **Bright-Fax Service:** When patients are seen out in the network, the Bright-Fax service provides a secured network to send Protected Health Information (PHI) to the MTF where the patient records are housed. This service is bi-directional and Health Insurance Portability and Accountability Act (HIPAA) compliant. In the past, a regular fax machine was used and countless hours were spent scanning, faxing, re-scanning, and filing records.

8) **Wireless DMLSS Access:** The Defense Medical Logistics Standard Support service is used by a number of MTFs for ordering supplies. NH Jacksonville's system is wireless. It is more efficient than previous systems because wireless DMLSS allows users to reorder consumable supplies using a hand scanner versus taking notes and manually entering orders from a desktop computer.

9) **LodgeNet:** An interactive Patient television system which provides the health care facility with on-demand patient entertainment, education and communications solution. This system also encompasses the **Closed Circuit Television Channel for Patients:** This closed circuit television channel provides educational programming for new parents and is broadcast directly to maternity rooms 24 hours a day. This feature provides a Newborn Channel which delivers critical information for both new and repeat parents at the moment they need it the most, in the privacy of their hospital room.

10) **ARUBA - The Additional Wireless Network:** Naval Hospital Jacksonville also provides its staff with this unique network within the infrastructure called the ARUBA secured wireless network. This is a Federal Information Processing Standard (FIPS) 140-2 certified wireless connection approved by the Department of Defense. The ARUBA network is centrally managed and acts as a backbone which provides support for many of the previously mentioned special projects such as the providers' portable tablets, wireless DMLSS capabilities, RTLS devices and even the VOCERA communication devices.

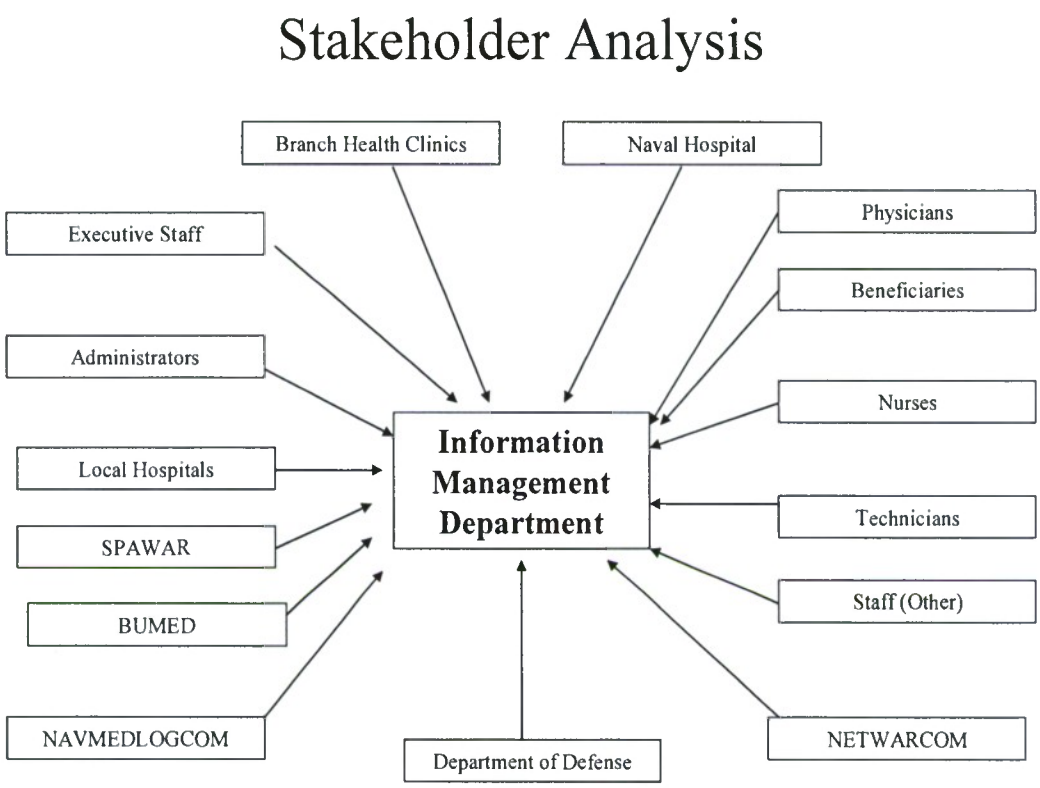
11) **Juniper Remote Access:** This function gives the Naval Hospital staff the ability to connect to the commands encrypted and secured network from a remote location via a home or hotspot internet connection.

Another unique feature of the IM department at Naval Hospital Jacksonville is that they are entirely independent of any outside firms that would otherwise assist in everyday operations. These are just a few ways that the IM department and its team indirectly contribute to Naval Hospital Jacksonville's strategic plan.

Stakeholder Analysis

The advantages of the stakeholder analysis are that it considers all independent groups and individuals as well as their major needs and wants. The internal, external and those that are both internal and external (otherwise known as interface) stakeholders of the IM department can be seen in Figure 3.

Figure 3. Stakeholder Analysis



This stakeholder analysis allows us to identify the forces affecting the organization. There is a reciprocal relationship between the IM department and these stakeholders. Knowing this relationship as well as their needs and wants is important to the success of the IM department.

External Environmental Analysis

Like most other Information Management Departments within the Department of Defense (DoD), the Information Management Department at Naval Hospital Jacksonville has no need to drive for profits and absolutely no interest in competing with the civilian sector or other DoD IM departments.

Swayne, Duncan, & Ginter discuss the primary focuses, advantages and disadvantages of eight different environmental analysis frameworks from the simple trend identification and extrapolation method and stakeholder analysis to the scenario writing analysis (2006). Each has many advantages and disadvantages. For this unit-level strategy, a simple strategic thinking framework such as the trend identification and extrapolation technique along with a stakeholder analysis will be the frameworks used.

Simple Trend Identification and Extrapolation

The simple trend identification and extrapolation advantages are that it is simple, logical, and easy to communicate. The observed environmental data are evaluated and measured based upon its impact to the IM department. Each factor is significant to the viability of the department. A visual representation gives the organization's decision-makers an opportunity to prioritize these factors and make decisions on

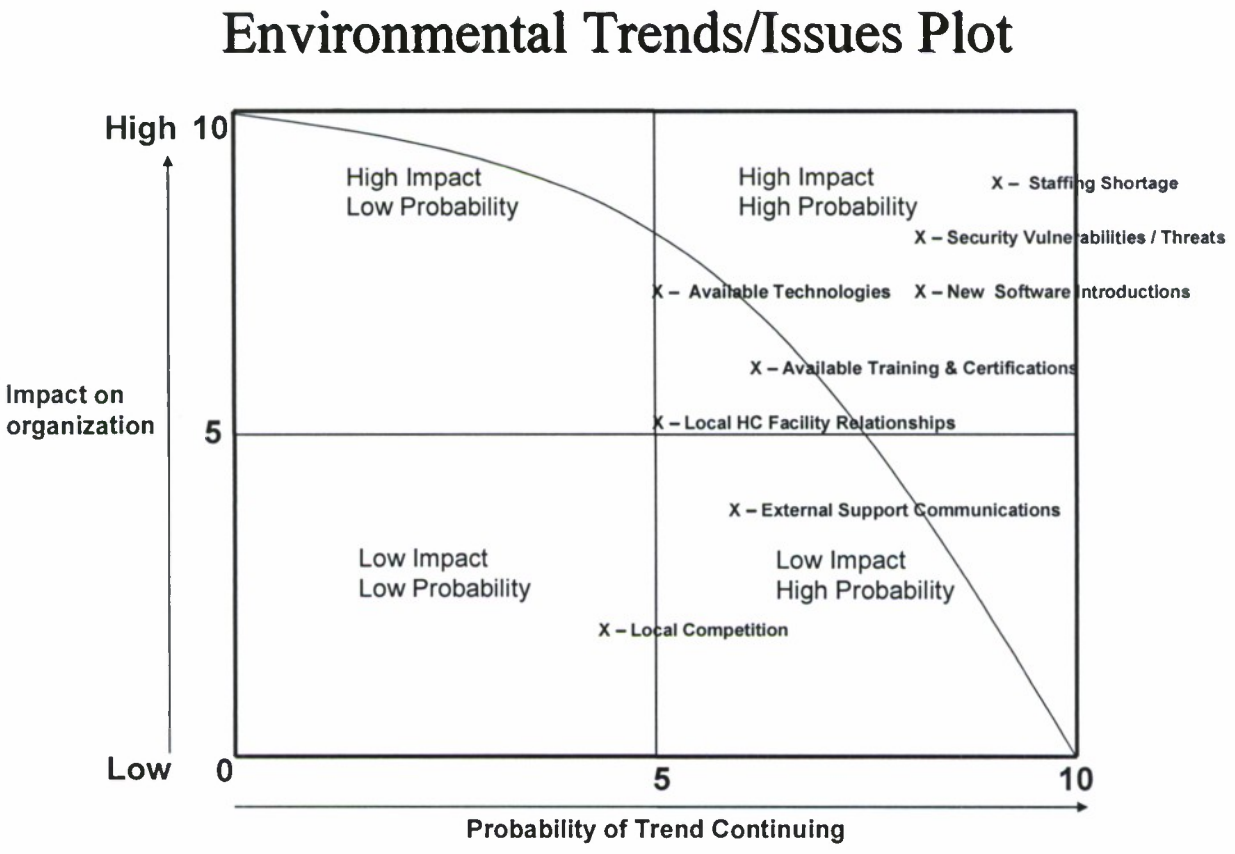
whether to incorporate them into the strategic plan. Table 1 identifies the trends and issues identified by the environmental analysis and propose whether it is an opportunity or a threat to the organization. Empirical evidence is summarized in support of each position, which is then followed by a numerical ranking of impact to the organization and probability of the factor continuing.

Table 1. *Trend Identification & Extrapolation*

Trend / Issue	Opportunity / Threat	Evidence	Impact on our Organization (1-10)	Probability of Trend Continuing (1-10)
IMD Staffing Shortage	Threat	Increased technology, new software demands & INFOCON 3 require increased support	9	9
Security Vulnerabilities	Threat	Advancement in technology causes increase in number of hacker attacks	8	8
Local Competition	Opportunity	Part of military health care system. Drive for profits are non-existent to IM dept.	3	4
Introduction of New Software / Systems	Threat	Introduction of Electronic Medical Records (EMR) & other systems are continuous	7	8
Local / Civilian Health Care Facility Relationships	Opportunity	Healthy collaboration with civilian counterparts due to non - competitive relationship	5	5
Communications with External Support Organizations	Threat	Various external support functions with non-existent organizational chart; unclear external chain of command	4	6
New Technologies and Tools Available to Staff	Opportunity	Extensive list of COT software available to staff for computer and server management	7	5
Technical Training and Certifications Available	Opportunity / Threat	O - Security Plus & CISSP T- Time needed for training takes away from work	6	6

Furthermore, Figure 4 displays a plot of the previously identified trends and issues. Within the plot, the items which fall within the High Impact / High Probability quadrant and to the right of the critical issues line can be considered when composing the strategic plan.

Figure 4. Simple Trend / Issues Plot



Of these trends, 1) **New Software Introductions** 2) **Security Vulnerabilities** and 3) **Future Staffing Issues** are viable issues worth considering in the IM Departments strategic analysis. In today's quickly growing health care environment, it is not unusual to see heavier workloads in the IM departments that support them. There are many components in the health care facilities IM department that either currently affect or are likely to affect the way in which health care providers perform everyday tasks and provide care. For example, the introduction of new systems may lead to increased security requirements. As such, careful staffing guidelines and communications with external support organizations ensure the IM department maintains support for the health care organization, its business, and strategic goals.

1) New Software Introductions

A significant trend influencing the way all IM departments in a health care facility operate is the introduction of new systems. Since the introduction of the first personal computer in a health care organization for simply reading emails and maintain simplistic databases to today's complicated systems attached to Computed Tomography Units and those which help create digital X-rays, new innovations and the demand for even

more technology require newly created systems. One example can be seen in the health record arena where most health care organizations are moving away from pen and paper records to the Electronic Medical Record (EMR). As previously mentioned, Naval Hospital Jacksonville already uses the CHCS and AHLTA forms of EMR's for outpatient record keeping. An upcoming new system that many MTF's are predicted to soon be introducing is an EMR for handling inpatient records. This new system, developed by CliniComp International called Essentris, has already been introduced to a few to a few MTF's and is expected to deploy at Naval Hospital Jacksonville in the third quarter of 2009. With the vast number of current systems in place and the unpredictable number of systems that may be soon to come, it is not difficult to see how this component may affect not only the IM department but the entire health care facility if not carefully considered. The introduction of new systems can severely affect current and upcoming IM department operations in more than one way. As previously mentioned, new systems tend to affect other components of Naval Hospital Jacksonville's environment in that more systems require more vigilance in the Information Security and Information Awareness (IA) arenas as well. Because newly introduced systems will require additional maintenance and IA measures, staffing levels must also be considered.

2) Information Security Vulnerabilities

Information Security and IA influence the manner in which an IM department operates, regardless of the organization. This trend is considered a high-impact issue with a high probability of continuing into the future. As an increasing number of systems are put in place and attached to nearly every piece of medical equipment, information security becomes more difficult to maintain. Naval Hospital Jacksonville's Information Assurance Manager (IAM) and other IM department staff continuously and diligently monitors policies and procedures regarding proper information security. Responsibilities include training, data control and integrity, confidentiality, individual accountability, and non-repudiation. Other areas of responsibility include but are not limited to:

- Hospital information security policy
- Information security awareness
- New employee indoctrination
- Data confidentiality issues
- Individual accountability issues
- Password control issues
- Data and software access control
- Equipment and resource usage

- Information security violation reporting
- Unauthorized software use and piracy issues
- Virus detection and eradication issues
- Internet access and use

Information Security and IA appear transparent when everything is under control, but these components can drastically change in a matter of minutes when compromised. An example may be illustrated by the recent immediate change from a relaxed Information Operations Condition (INFOCON) Level 5 to a heightened condition of posture, INFOCON Level 3. This change was the result of multiple attacks by hackers against DoD networks in mid-November 2008. The motive behind any hacker attack is unknown, as there are a multitude of possibilities from financial gains and political statements to employer revenge. Any activity that could lead to the potential compromise of information systems within the DoD is justification to heighten security measures.

INFOCON Levels vary from a secure, yet relaxed level five to the highest readiness condition level one. Strategic Command Directive (SD) 527-1 (2006) details the INFOCON levels as follows:

* **INFOCON Level 5:** Characterized by routine network operations (NetOps), normal readiness of information systems and networks that can be sustained indefinitely. Information networks are

fully operational in a known baseline condition with standard information assurance policies in place and enforced. During INFOCON 5, system and network administrators will create and maintain a snapshot baseline of each server and workstation in a known good configuration and develop processes to update that baseline for authorized changes.

* **INFOCON Level 4:** Increases NetOps readiness, in preparation for operations or exercises, with a limited impact to the end-user. System and network administrators will establish an operational rhythm to validate the known good image of an information network against the current state and identify unauthorized changes. Additionally, user profiles and accounts are reviewed and checks conducted for dormant accounts.

* **INFOCON Level 3:** Further increases NetOps readiness by increasing the frequency of validation of the information network and its corresponding configuration. Impact to end-users is minor.

* **INFOCON Level 2:** Readiness condition requiring a further increase in frequency of validation of the information network and its corresponding configuration. The impact on system administrators will increase in comparison to INFOCON 3 and will require an increase in preplanning, personnel training, and the exercising and pre-positioning of system rebuilding utilities.

* **INFOCON Level 1:** The highest readiness condition and addresses intrusion techniques that cannot be identified or defeated at lower readiness levels (e.g., kernel root kit). It should be implemented only in those limited cases where INFOCON 2 measures repeatedly indicate anomalous activities that cannot be explained except by the presence of these intrusion techniques.

The truth of the matter is that these are behind-the-scenes high maintenance areas for every IM department that affect current and future operations. Furthermore, the responsibilities associated with securing information systems increases with the number of systems and users in place.

3) Future Staffing Issues

A third component currently affecting the IM department for Naval Hospital Jacksonville is derived from the accumulation of all other components and factors that impact IM departments where there is change due to systems being added or workloads increasing. Careful consideration of staffing levels and their proper alignment is instrumental to ensuring optimal functioning within the department. This evolving trend is considered ongoing and of great interest to Naval Hospital Jacksonville. Due to volatility within the industry, the organization must change to

support the increasingly complex demands associated with the health care sector.

Service Area Competitor Analysis

An organization engages in competitor analysis to gain an understanding of the competitors in the area, to determine competitor vulnerabilities, assess the impact of its own strategic actions against specific competitors, and identify potential moves that a competitor might make that would endanger the organization's position in the market (Swayne, Duncan, & Ginter, 2006). The service area competitor analysis can be best determined by first defining the service category and service area, followed by service area structural and competitor analysis.

Service Category: Like many health care services, an information management department's services can be broken down into many subservices as well. A pediatric care department, for example, may decide to provide developmental pediatric care, urgent pediatric care, and adolescent care; they may even attempt to provide a comprehensive array of pediatric care (Swayne, Duncan, & Ginter, 2006). In the same manner, an IM department may provide individual services such as email or Web services, networking, electronic medical records, or personal computer repair services. On the whole, Naval Hospital

Jacksonville's IM department provides two (2) distinct service categories. The first service category includes those that are predetermined (and sometimes mandated) by the DoD's Information Technology chain of command. An example of this category is the Information Assurance/Security services which must be maintained by each DoD network. The second service category includes those that Naval Hospital's chain of command, in conjunction with the IM department, has chosen to provide. Services may be critically needed for patient care or simply nice to have, as with a secured wireless network and tablet PCs that increase provider productivity and efficiency. Naval Hospital Jacksonville is a completely comprehensive IM department. The service categories, as evidenced by previously mentioned portfolios, are abundant. Some of the services, such as the Internet connection, allows access to a large portion of the services provided by the Department of Defense's (DoD's) Defense Information Systems Agency (DISA) through a Non-Secure Internet Protocol Router Network (NIPERNET) and/or the Secret Internet Protocol Router Network (SIPRNET) channels. A commercial provider for such services would never be considered due to strict information security issues.

Service area: According to Swayne, Duncan, and Ginter (2006), the service area is a geographical area of customers or patients. Since the focus of this strategic plan is for the IM

department of Naval Hospital Jacksonville, its customers include the Naval Hospital's staff (approximately 2,300 personnel including branch health clinics) and it's beneficiaries (approximately 63,000 enrolled). These customers have differing information requirements. Staff IM needs may vary from as little as a Microsoft Outlook account for email usage to the need for tablet personal computers (PC's) with complicated software programs to allow for the viewing of patient data remotely. Beneficiary IM needs also vary from as little as the online prescription refills to information provided via the hospital's Web site where contact information, instructional videos, and appointment schedules may be found. The geographical area for customers and beneficiaries of the IM department ranges from as far north as the outlying clinics in Athens and Atlanta, Georgia to the southern most clinic in Key West, Florida.

Service Area Boundaries: Theoretically speaking, the geographic boundaries for an Information Management department may be global. Personnel with proper authorization and permissions, as with a provider, would be able to take his or her tablet PC anywhere in the world and maintain access to personal files remotely and securely, even when using a commercial Internet Service Provider (ISP).

Service Area Structural Analysis: The Five Forces framework designed by Michael Porter may be used to conduct a

service area structural analysis. The strength and impact of these five forces may be monitored and assessed to determine the viability of the service category today and assess changes likely to occur in the future (Swayne, Duncan, & Ginter, 2006). The Five Forces Framework is described by Swayne, Duncan and Ginter as follows:

- Threat of New Entrants - Identifies the possibility of new entrants into the market that could pose a possible threat and increase the intensity of competition.
- Intensity of Rivalry Among Existing Organizations - Competitors attempt to improve their position and the strategy of one organization begins to affect others.
- Threat of Substitute Products and Services - Various substitutes that perform the same function as the established products limit returns because at some price point consumers will switch to alternative products and services.
- Bargaining Power of Customers - Buyers of products and services attempt to obtain the lowest price possible while demanding high quality and better service. If buyers are powerful, the competitive rivalry will be high.
- Bargaining Power of Suppliers - Suppliers can affect the intensity of competition through their ability to control

prices and the quality of materials they supply therefore exerting considerable pressure on an industry.

1. **Threat of New Entrants (Low):** The threat of new entrants in the form of privatization is low because entry would be high in cost and very time consuming. Very strong and durable barriers to entry exist when the industry is a DoD Military Health System (MHS) IM department. Organizational protections, such as access to distribution channels, government and legal constraints, as well as security considerations, make it nearly impossible to penetrate the industry. An example includes the secret clearances required to engage in running a military Information Management department. Even if all requirements were met, no agency would be allowed to take complete ownership of a government-owned IM department, only its management.
2. **Competitive Rivalry (Low):** The threat of competitive rivalry is low in this category due to a lack of competitors. MTF staff has no choice but to use the services of the Global Information Grid (GIG) provided by the United States DoD. No other products or services are authorized for the use of official government information and military health care records. It would be too easy to compromise DoD security by using a commercial IM provider.

The number and capability of competitors, therefore, is nonexistent. In reality, no one else can do what the IM department does; the infrastructure must remain under the purview of the DoD. Efforts to privatize IM functions have been largely absent.

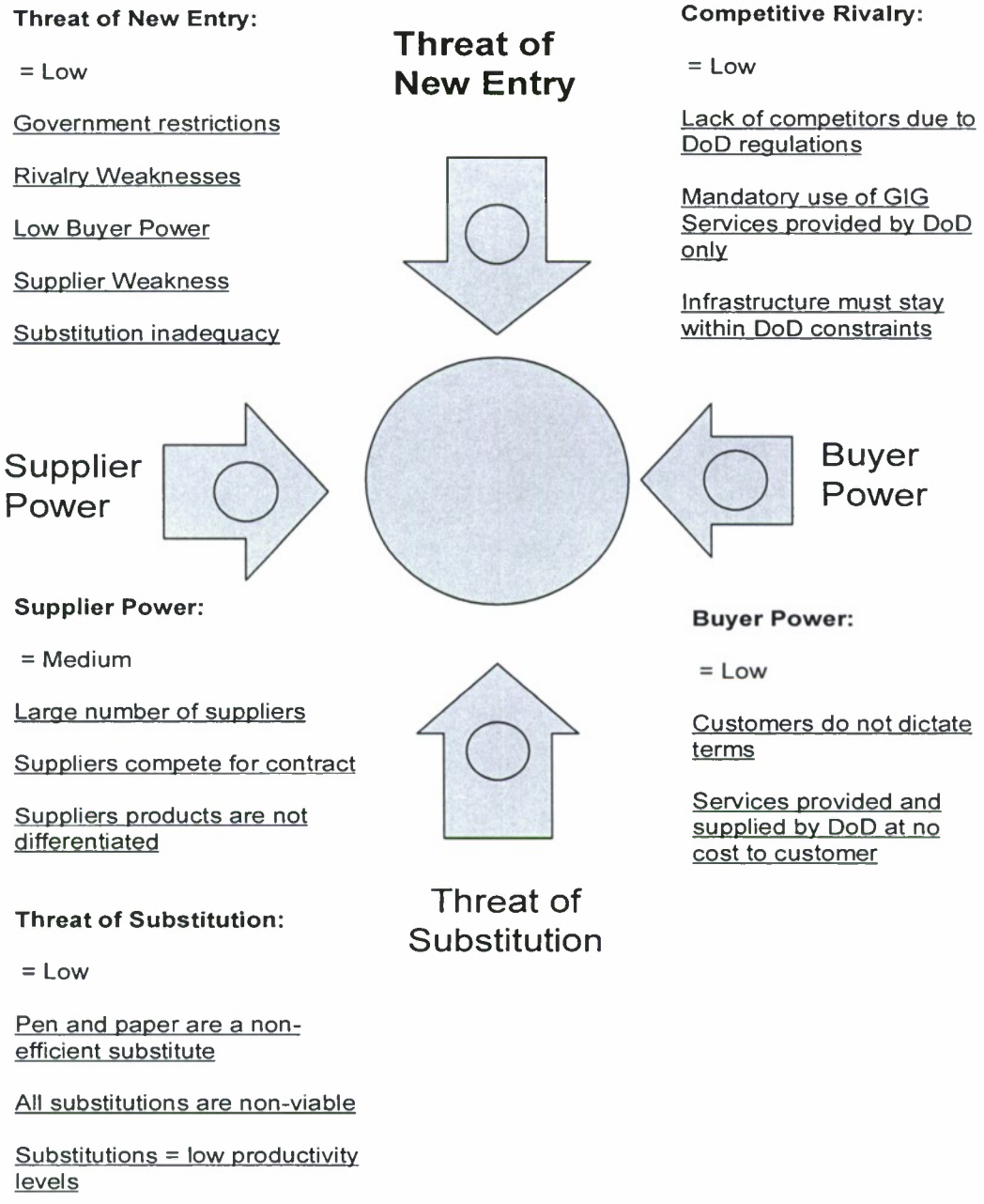
3. **Threat of Substitutes (Low):** Fortunately, substitutes are largely independent of current technology when it comes to an IM department. In the earlier stages of computers, databases, electronic medical records, and other forms of software, it was easier for people to revert to doing work manually. Today, it is highly unlikely that the IM department's customers would resort to interdepartmental or standard mail service versus email. Nor would they prefer index cards to databases, or typewriters over computer-based word processing. It is not to say that handwritten request forms, appointment slips, prescription pads, and the like should not be kept on-hand and readily available in the case of an absolute emergency or power outage so that business may continue. However, business would not continue as usual; manual processes are not as productive and efficient as the current automated processes. Furthermore, congressional mandates requiring electronic processing of health information precludes the use of outdated pen-and-paper systems.

4. **Buyer/Customer Power (Low):** It is not very easy for customers to dictate terms to the IM department, as their power is negligible. The cost of the IM services is virtually transparent to the customers. In fact, the services provided by all MTF IM departments are decided upon and provided by DoD, not local vendors or commercial agencies. If DoD policy states that all users will use the Microsoft Windows' XP operating systems and Microsoft Office Suite programs, then hospital staff will utilize those systems. If a staff member or a particular group of staff members decided they wanted to use another operating system or software package not approved and provided by the DoD, they would have to submit a request through a Department of the Navy Application and Database Management System (DADMS) Validation process. If approved, the software would be placed on the DADMS approved list and the command would decide whether to purchase software licenses and install the software on a requestor's computer.
5. **Supplier Power (Medium):** Supplier power is not high because a suppliers help is not in high demand. In the IM department, supplies can be from as large as servers, personal computers (pc's) and laptops to as small as printers and software. Suppliers could drive up prices if there were not such a large number of suppliers and

substitutes for these products available. There is usually competition between vendors to provide these services to the IM department. If there is a request for 3000 computers, several bids from many reputable companies such as Compaq, Dell, Gateway or Sony would be submitted. The competition between suppliers to win a government contract usually provides the IM department with a cost advantage. No vendor knows what the other one has bid; therefore, vendors tend to provide the best available price or risk a competitor being awarded the contract. Although the products and services are important, the products are not largely differentiated (a printer is a printer for the most part), thus further diminishing supplier power. Another thing to consider when it comes to the suppliers is that the IM department weighs the total cost of ownership when purchasing a certain brand and not just the purchase price. For example, if printer A has the same specifications as Printer B but the latter printer has significantly lower priced print cartridges then Printer B would be the printer of choice. Further, consideration is given to supplies that meet the specifications mandated by the upper echelon; as such requirements are usually implemented for security reasons. Software programs, as with anti-virus and firewall software, are good examples.

Figure 5 below demonstrates the significance each of Porter's five forces has with regard to Naval Hospital Jacksonville's Information Management Department.

Figure 5. Porters Five Forces



Competitors' Strengths and Weaknesses: As previously mentioned, the IM department at Naval Hospital Jacksonville is unique in that it is a Department of Defense (DoD) facility. A service area competitor analysis for this type of environment is difficult to assess due to the infrastructure and extreme levels of security the DoD places on it's Information Technology and it's infrastructure. At first glance, it may seem that a civilian competitor or organization may be able to provide needed services and compete for some of the IM department's functions. Porter's Five Forces framework proves that the likelihood of having any competitor's for a DoD Information Management department are highly unlikely to impossible. Every aspect of the framework shows that, due to the nature of the business, the IM department has enormous strength in each of the categories and there is minimal to no threat of market entry or substitutions; therefore, no major competitors exist.

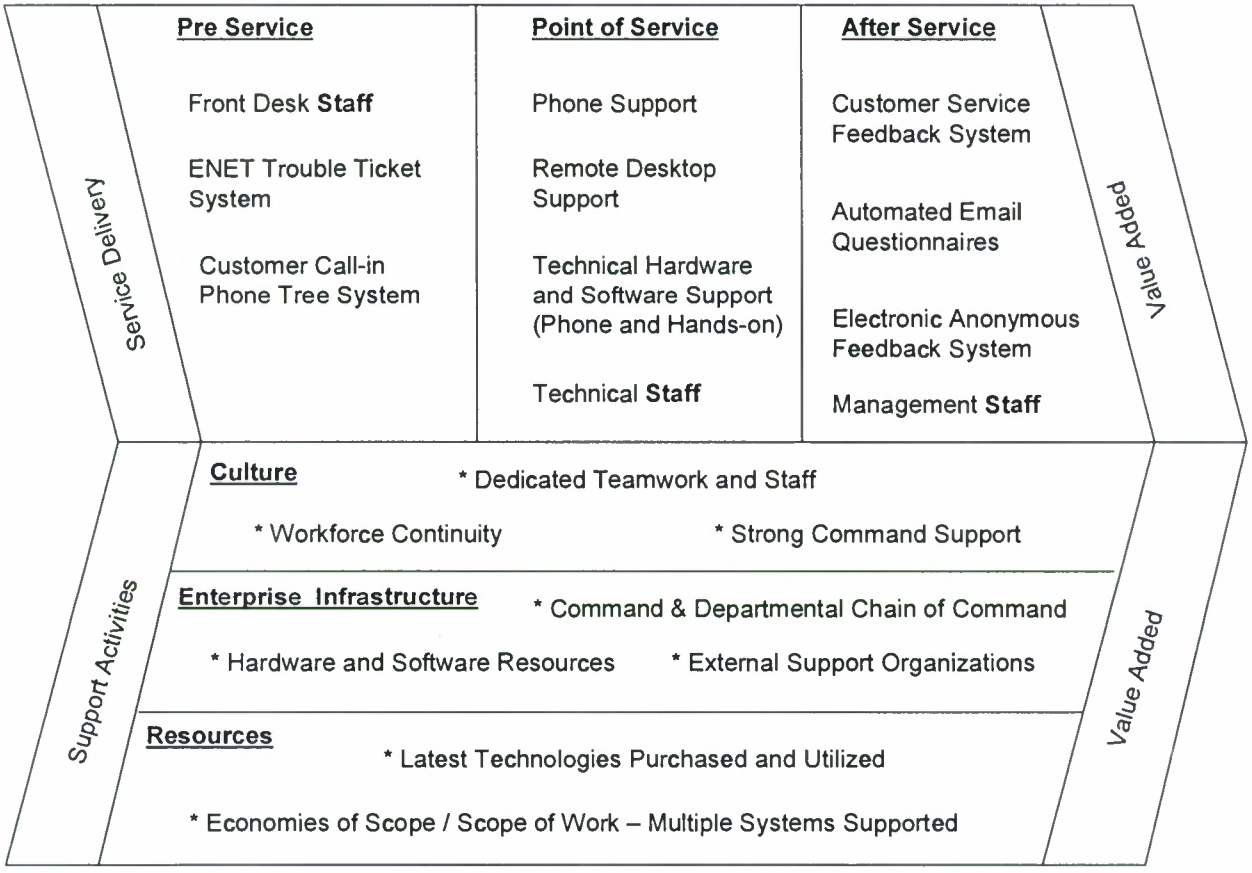
Internal Environmental Analysis

The internal environmental analysis for the Information Management Department of Naval Hospital Jacksonville consists of the IM department's most essential functional areas. Supervisors from each of these functional areas were chosen, and a strategic planning team created. The strategic planning team was used to facilitate strategic planning sessions for the Strengths,

Weaknesses, Opportunities, and Threats (SWOT) analysis as well as other facets of the strategic analysis. An organizational value chain tool was developed that holds a closer fit to most DoD-owned IM departments. The strategic planning team met and created a raw list of strengths and weaknesses. The strengths and weaknesses were further discussed and evaluated against the value chain to determine which created the most value for its customers. Swayne, Duncan, & Ginter (2006) describe an organizational value chain as an effective means of illustrating how and where value may be created.

Strengths and Weaknesses: Figure 6 depicts the chosen value-adding components for Naval Hospital Jacksonville's IM department. The upper portion of the value chain focuses on the primary activities of the organization which pertain to the delivery of services. These are the pre-service, point-of-service and after-service service delivery functions that create value and develop a competitive advantage for the IM department. The lower portion of the value chain focuses on the value-adding support activities, such as the culture, infrastructure, and resources. Support activities also create value and add competitive advantage to the IM department.

Figure 6. Value Chain



Once the list of strengths and weaknesses was refined by those which create the most value for the organization, they were further classified into resources, competencies or capabilities. This approach allows for easier identification of each strength or weakness. Table 2 classifies the strengths and weaknesses into resources, competencies, or capabilities.

Table 2. *Resources, Competencies and Capabilities*

Description	Strength or Weakness?	Resource	Competency	Capability
Procurement Process	W		X	
Customer Support	S			X
Staffing Levels / Staff Burnout	W	X		
Pro-active System Management	S		X	
Adequate Resources (Hardware & Software)	S	X		
Security Vulnerabilities	W			X
Communications	W	X		
Space limitations	W	X		
Command Training	S		X	
Scope of Work (# of Projects Supported)	S & W	X		
Command Level Support	S	X		
Locally & Internally Developed Applications	W			X
Corporate Knowledge	S	X		
Military Staff Under-utilized Due to Deployments	W			X
Workforce Continuity	S	X	X	
Medical Equipment IT Support and Adaptation	W			X
Dedicated Staff / Teamwork	S			X
Customer Service Feedback System	S	X		

The next step was to evaluate each strength or weakness for competitive relevance and then, place an emphasis on those found to have any competitive factors. Tables 3 and 4 further evaluate each strength and weakness for competitive relevance based on value, rareness, ability to be imitated and sustainability.

Organizational Strengths: Table 3 shows each of the strengths and their analysis for competitive relevance. The strengths should have value, rareness, be difficult to imitate, and sustainable in order for competitive advantage to be considered (Swayne, Duncan, & Ginter, 2006). The criteria for each determination are as follows:

Value: If strength does not have high value in the marketplace, then it is not considered a relevant strength with a competitive advantage (Swayne, Duncan, & Ginter, 2006).

Rareness: Rareness is simply determined by judging whether the strength is or is not found among competitors. If the strength is rare among competitors then an answer of "yes" (Y) was determined whereas those strengths shared by many competitors received a "no" (N). Valuable strengths that are not rare among competitors do not create a competitive advantage (Swayne, Duncan, & Ginter, 2006).

Imitability: This determines whether the strength possessed by the IM department would be "difficult" (D) or "easy" (E) for competitors to obtain and imitate. The more difficult it is for the strength to be imitated, the better possibility of the strength possessing long term competitive advantage. Those strengths which can be imitated easily usually possess merely a short-term competitive advantage (Swayne, Duncan, & Ginter, 2006).

Sustainability: The final question of sustainability is simply a judgment call which determines if the IM department can sustain the resource, competency or capability. If the sustainability is possible then an answer of "yes" (Y) is chosen; if it is not likely that the resource, competency or capability can be sustained then the answer is determined to be a "no" (N) (Swayne, Duncan, & Ginter, 2006).

Table 3. *Competitive Relevance Analysis*

Strength Description	Strength Requires Attention?	Value	Is the Strength Rare?	Is the Strength Easy or Difficult to Imitate?	Can the Strength be Sustained?
	Y / N	H / L	Y / N	D / E	Y / N
Customer Support	Y	H	N	E	Y
Pro-active System Management	Y	H	Y	D	Y
Adequate Resources (Hardware & Software)	Y	H	N	E	Y
Command Training Received by IM Staff	N	L	N	E	Y
Scope of Work (# of Projects Supported)	Y	H	Y	D	Y
Command Level Support	N	H	N	D	N
Corporate Knowledge	N	L	N	D	N
Workforce Continuity (GS & Contract Staff)	Y	H	N	E	Y
Dedicated Staff / Teamwork	N	H	N	E	N
Customer Service Feedback System	Y	H	N	E	Y

After evaluating each of the strengths, Swayne, Duncan, & Ginter, provide a key with suggestions for each of the strengths with high value (2006). The suggestion key with a brief explanation for those high value strengths is as follows:

1. **HNEY** (valuable, not rare, easy to imitate and can be sustained): Most competitors have this strength and those that do not can develop it easily. Maintain these for an advantage over competitors.
2. **HNEN** (valuable, not rare, easy to imitate and cannot be sustained): All competitors can have this strength. Not a difficult strength to develop. Provides no advantage and few resources should be devoted to maintaining these strengths.
3. **HNDY** (valuable, not rare, difficult to imitate and can be sustained): Many competitors may have this strength but it is difficult to develop; care should be taken to maintain it.
4. **HNDN** (valuable, not rare, difficult to imitate and cannot be sustained): Provide little short term advantage since those who have this strength will not be able to sustain it. The organization should be cautious in devoting resources to maintaining this type of strength.
5. **HYEY** (valuable, rare, easy to imitate and can be sustained): This is an easy to imitate strength. May be a source of short term advantage; obtain advantage of this strength but should not be used for basis of strategy.

6. **HYEN** (valuable, rare, easy to imitate and non-sustainable strengths): May provide short term advantage but this strength is too easy to imitate and cannot be sustained therefore, developing strategies around such strengths is not recommended.
7. **HYDN** (valuable, rare, difficult to imitate and cannot be sustained): Only provides the possibility of a short term advantage; not a strength that can be sustained.
8. **HYDY** (valuable, rare, difficult to imitate and sustainable): Provide the basis for a long term competitive advantage and should be developed as much as possible.

As can be seen from the above suggestion key, combinations 1) **HNEY**, 2)**HNDY**, and 3)**HYDY** require attention whereas the rest of the combinations offer only short-term advantages, and do not possess the criteria upon which a strategy should be based. Of the ten departmental strengths discussed by the strategic planning team, six (6) of them require some type of action or maintenance strategy. These six strengths, which will be discussed in further detail in the strategy adaptation and implementation phases, are: customer support, pro-active system management, resources, workforce continuity, scope of work and the customer service feedback system.

Organizational Weaknesses: Table 4 below depicts each of the weaknesses and the associated analysis for competitive relevance. Weaknesses may be serious competitive disadvantages if the criteria they represent have high value to customers (H), are not possessed by competitors (N), cannot be easily eliminated or corrected (D), and competitors can sustain their strengths (Y) (Swayne, Duncan, & Ginter, 2006). The criteria for determination are similar to the criteria for the strengths but for weaknesses, the following questions are answered:

Value: Is the weakness of high or low value?

Rareness: Is the weakness common (not rare) among competitors?

Imitability: Is it easy or difficult to correct the weakness?

Sustainability: Can competitors sustain their advantage?

Table 4. *Competitive Relevance Analysis*

Weakness Description	Weakness Requires Attention?	Value	Is it a Common Weakness	Imitability = Easy or Difficult to Correct Weakness	Can Competitors Sustain Advantage
	Y / N	H / L	Y / N	D / E	Y / N
Procurement Process	N	L	Y	D	N
Staffing Levels / Staff Burnout	Y	H	N	D	Y
Security Vulnerabilities	N	H	Y	D	N
Communications	N	H	Y	D	N
Locally & Internally Developed Applications	N	L	Y	E	N
Military Staff Utilization Minimal Due to Deployments	N	L	Y	D	N
Medical Equipment IT Support and Adaptation	N	H	Y	D	N
Space limitations	N	L	Y	D	N
Scope of Work (# of Projects Supported)	Y	H	N	E	N

Just as Swayne, Duncan, & Ginter, provided a suggestion key for the high value strengths, the following key provides suggestions for the most common and attention demanding weaknesses:

1. **HYEY** (valuable to customers, rare to competitors, easy to correct and competitors are able to sustain their advantage):

Weakness of the department but others as well. No competitive disadvantage in short run.

2. **HYEN** (valuable to customers, rare to competitors, easy to correct and competitors are not able to sustain their advantage): Weakness of our organization but others as well. Competitors cannot sustain advantage therefore, no competitive disadvantage.

3. **HYDY** (valuable to customers, rare to competitors, not easy to correct and competitors are able to sustain their advantage): Competitors also possess the weakness, but it is a dangerous situation that must be addressed to ensure competitors do not overcome this difficulty and address it first. No short-term competitive disadvantage.

4. **HYDN** (valuable to customers, weakness is rare to competitors, not easy to correct and competitors are not able to sustain their advantage): Weakness is common and difficult to correct. Competitors cannot sustain any advantage represented by this weakness.

5. **HNEY** (valuable to customers, weakness is not rare to competitors, easy to correct and competitors are able to sustain their advantage): Short-term competitive disadvantage. Competitors are not weak in this area but the weakness is easy for our organization to correct. The organization should move quickly to correct this type of weakness.

6. **HNEN** (valuable to customers, weakness is rare to competitors, easy to correct and competitors are not able to sustain their advantage): Not a competitive disadvantage. Competitors are not weak in this area but the weakness is easy for our organization to correct. This should be corrected although any advantage will be short term.

7. **HNDY** (valuable to customers, weakness is not rare to competitors, not easy to correct and competitors are able to sustain their advantage): This weakness is valuable; most competitors do not have it. It is difficult for the organization to correct, and competitors can sustain their advantage. Weakness represents a serious competitive disadvantage and attention is demanded.

8. **HNDN** (valuable to customers, weakness is not rare to competitors, not easy to correct and competitors are not able to sustain their advantage): Attention is directed toward difficulty of overcoming weakness relative to the ability of competitors to retain the advantage. This can be a serious competitive disadvantage in the short-term.

As can be seen from the above suggestion key, combinations 1) **HNEY**, 2)**HNEN**, 3)**HNDY,** and 4) **HNDN** have the characteristics for competitive disadvantages and require attention whereas the rest of the combinations do not indicate any competitive disadvantages possessing the criteria upon which a strategy

should be based. Of the nine (9) departmental weaknesses discussed by the strategic planning team, two (2) of them demonstrate the characteristics for a competitive disadvantage if attention is not given them. These two attention-demanding weaknesses, which will be discussed in further detail in the adaptation phase, are low staffing levels and a large scope of work.

Directional Strategies

Mission, vision, values and strategic goals are considered the directional strategies because they guide strategists when making key organizational decisions (Swayne, Duncan, & Ginter, 2006). For the purpose of this unit-level strategic analysis of the IM department, the objective will consist of aligning the IM department to support the directional strategies of the Naval Hospital rather than creating a new set of directional strategies.

Strategy Implementation

Swayne, Duncan and Ginter explain how organizations may be classified by how they behave within their market segments or industry. Miles, Snow, Meyer and Coleman provided research depicting four organizational strategic postures: defenders, prospectors, analyzers and reactors (Swayne, Duncan, & Ginter, 2006). Before beginning strategy implementation, it is important

to determine the department's environmental posture. The current market behavior plays a major role in this determination.

Strategic Postures:

After carefully researching the current market behavior involved with Naval Hospital Jacksonville's IM department, the strategic posture which most closely represents the department is the analyzer strategic posture. The analyzer strategic posture is a combination of the defender and the prospector strategic posture (Swayne, Duncan, & Ginter, 2006). Defender traits, at first, would seem the most incongruent with any IM department, as defenders devote primary attention to improving efficiencies through existing operations. This is a strategic posture that utilizes cost-efficiency and limited product development, concepts that would not seem consistent with Information Technology (IT) sectors. Prospectors on the other hand, frequently search for new market opportunities and regularly engage in experimentation and innovation while finding and exploiting new products and market opportunities (Swayne, Duncan, & Ginter, 2006). This posture would seem like the most advantageous to the Information Technology community. The fourth strategic posture, the reactor, is the only one of the four that lacks consistent approaches, cannot adapt effectively, and makes changes primarily in response to environmental factors. This is an approach that would not leave desirable results for any IM

department whose focus should be on explicit strategies resulting in a pattern of consistent and stable behavior.

The Analyzer Strategic Posture:

The analyzer strategic posture, as previously mentioned, is a combination of the defender and prospector strategic postures. The defender strategic posture would seem like one of the last characteristics an IM department would want to adhere to due to its limited funding and the need for attempting to survive with merely existing technologies. Unfortunately, Naval Hospital Jacksonville's IM department does not have unlimited funding. Since Naval Hospital Jacksonville's IM department is a not-for-profit, DoD owned facility with limited funds, cost efficiency becomes a must in the department. These traits are central to the defender's strategic posture, and provide a very close fit for the IM department. Although there is limited funding, Naval Hospital Jacksonville's IM department continues to do well in providing the latest and greatest technologies, a trait more specific to the prospective strategic posture making it seem as a close fit for the IM department as well. The typically rapid changing environment and constant diversification, to include product and market development strategies, are characteristic of the prospector strategic posture. In an ideal Information Management department, the prospector strategic posture would

seem like them most beneficial, as such a posture includes distinct characteristics for an IM Department as well. Regardless of funding issues (defender), the department continues to find and exploit new products and market innovations (prospector), thus supporting analyzer strategic posture characteristics.

Before moving onto the final stages of strategy development and implementation, the analyzer strategic posture is evaluated to determine suitability for Naval Hospital Jacksonville's IM department. The reactor strategic posture would be least suited for an IM department as inconsistent and unstable responses to environmental factors could lead to a rapid fall. The defender strategic posture, although being the next least desirable for an IM department since IM departments need to operate without cost constraints to be successful is inevitable for DoD owned not-for-profit organizations. The prospector strategic posture, although the most desirable for an IM department's success, is not always possible when regular engagements of experimentations and innovations are prohibited by funds. The final determination is that the best suited strategic posture for Naval Hospital Jacksonville's IM department is the analyzer strategic posture.

After determining that Naval Hospital Jacksonville and the IM department are sitting in the most appropriate posture for their environment, the strategy adaptation and implementation

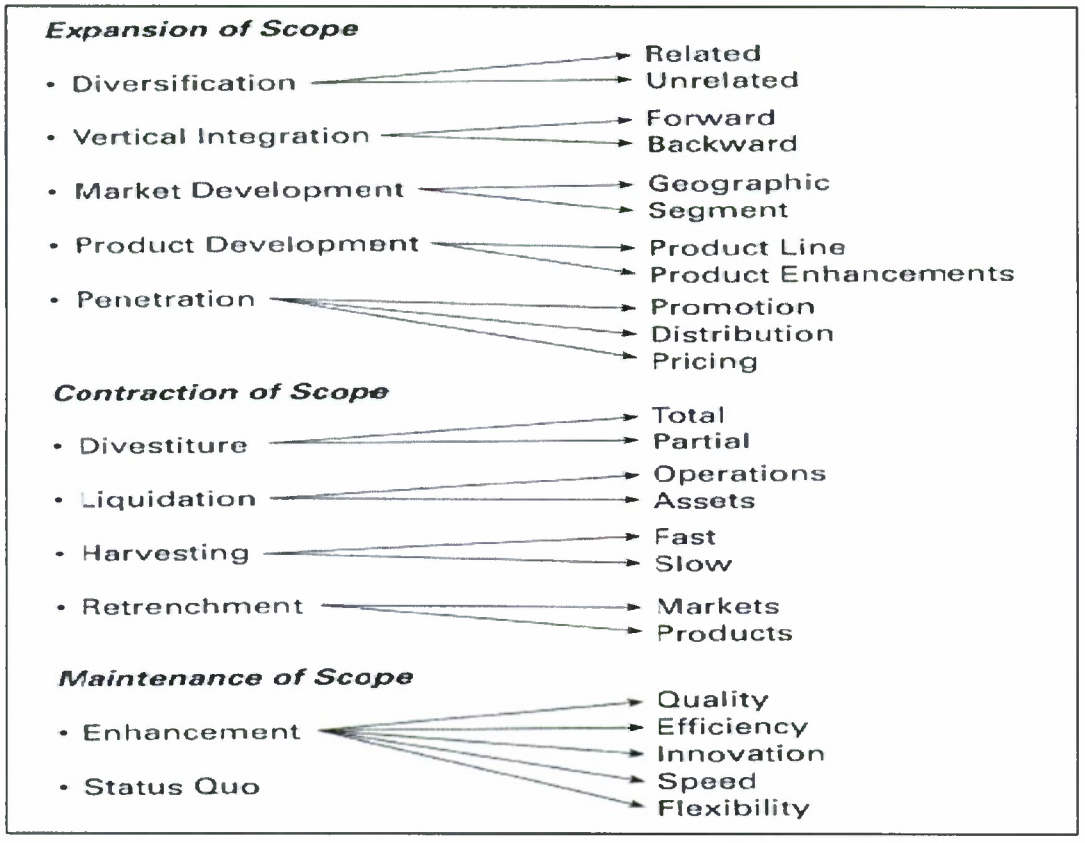
phases can be tackled without concern of re-directing resources and competencies. The implementation phase includes goals, objectives, and action steps that Naval Hospital Jacksonville's IM department can adopt over the next two to three years based on the findings of the strategic analysis.

Adaptive Strategies

Adaptive strategies are more specific than directional strategies. These strategies determine the scope of the organization and specify how the organization will expand scope, contract scope or maintain scope (Swayne, Duncan, & Ginter, 2006). **Expansion of scope** is a potential strategy for corporate to divisional level strategies. Standing at a unit-level, the IM department of Naval Hospital Jacksonville is already faced with a very large scope of work therefore expanding in this direction is not a potential adaptive strategy. **Contraction of scope** would not be a wise adaptive strategy for reasons previously mentioned such as security vulnerability, the mandated use of the GIG and the fact that the infrastructure must stay under the purview of the DoD just to name a few. The final option for adaptive strategies is the **maintenance of scope**. The maintenance of scope is an ideal strategic thinking map of an adaptive strategy for

an IM department. Figure 7 illustrates each of these adaptive strategies.

Figure 7. Strategic Thinking Map of Adaptive Strategies;



Adapted from: Swayne, L. E., Duncan, W. J., & Ginter, P. M. (2006). *Strategic Management of Health Care Organizations, Fifth Edition*. Malden, MA: Blackwell Publishing.

Maintenance of scope does not necessarily mean that the organization will do nothing. Rather, progress is appropriate

and either enhancement (slight change) or status quo (maintenance) strategies may be sufficient.

Strategy Implementation: Goals and Objectives

Now that the adaptive strategies have been formulated and a "maintenance of scope" strategy has been determined as the best outcome, strategy implementation techniques can be introduced. Strategy formulation is a matter of "fitting" the organization to its environment (Swayne, Duncan, & Ginter, 2006). In this case, "fitting or aligning" the Information Management department is the appropriate route for the IM department to support the command's directional strategies. Every department that supports Naval Hospital Jacksonville is unique and no single method, construct, or strategic thinking map may fit them all.

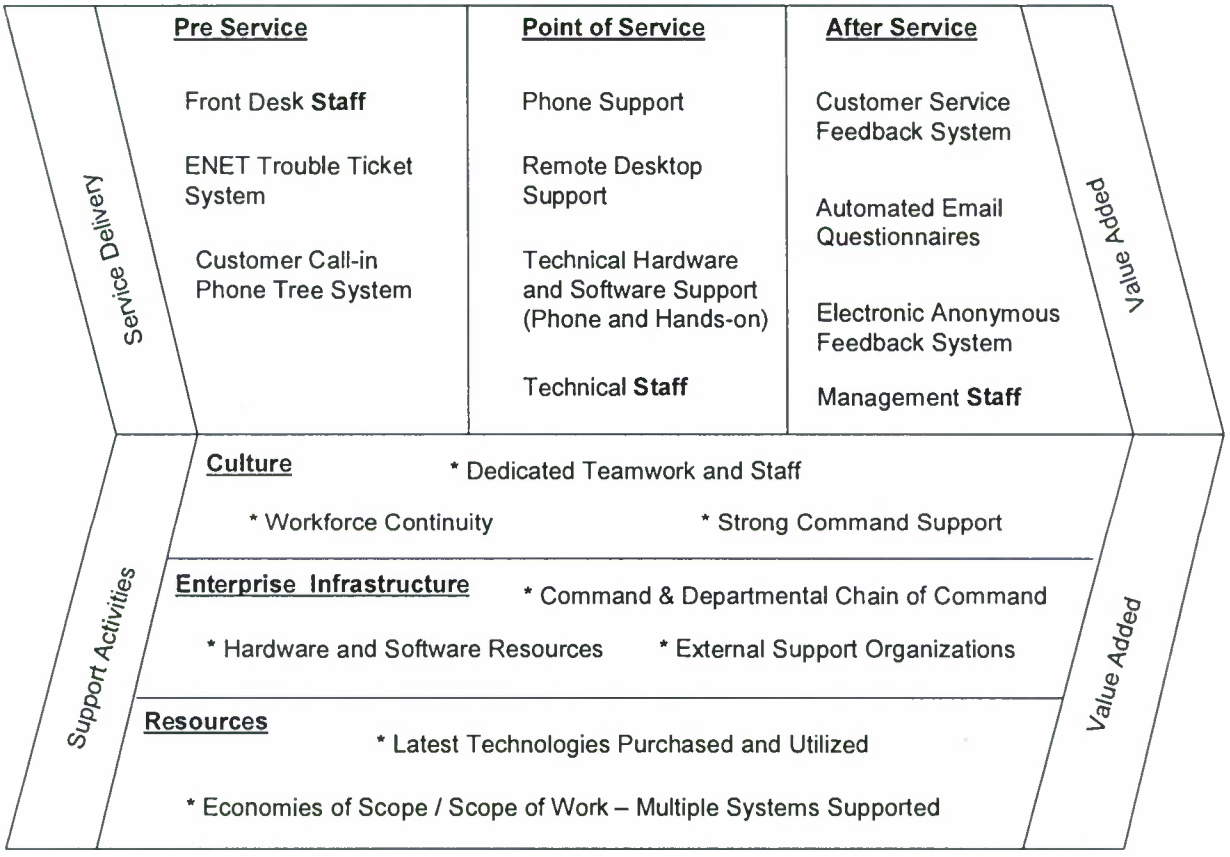
At this point, revisiting strengths and weaknesses will allow the IM department to tie attention-demanding traits to the previously chosen adaptive strategy. Of the 18 total strengths and weaknesses discussed by the strategic planning group, six strengths and two weaknesses required attention, as per the competitive relevance evaluation. These can be seen in Table 5.

Table 5. *Strengths and Weaknesses*

Description	*Strength or Weakness?*
Place (x) or appropriate code in boxes	**S / W**
Customer Support	S
Staffing Levels / Staff Burnout	W
Pro-active System Management	S
Adequate Resources (Hardware & Software)	S
Scope of Work (# of Projects Supported)	S & W
Workforce Continuity	S
Customer Service Feedback System	S

Utilizing a value adding strategy map allows cross-referencing the strengths and weaknesses in Table 5 above with the previously performed value chain (see Figure 8 below) to ensure those with the most significant impact are addressed in the implementation phase.

Figure 8. Re-visit to the Value Chain



Strengths to Address and their Correlation to the Value Chain:

1. Customer Support = Service Delivery - Point of Service.
2. Proactive System Management = Support Activities - Resources
3. Adequate Resources (Hardware & Software)= Support Activities - Enterprise Infrastructure

4. Scope of Work (Number of Projects Supported) = Support Activities - Resources.
5. Workforce Continuity = Support Activities - Culture.
6. Customer Service Feedback System = Service Delivery - After Service

Weaknesses to Address and their Correlation to the Value Chain:

1. Staffing Levels / Staff Burnout = All aspects of Service Delivery Value Added Functions
2. Scope of Work (Number of Projects Supported) = Support Activities - Resources.

Although almost every strength or weakness seems to align with a specific sector of the value chain, some strengths and weaknesses are associated with more than one sector of the value chain. Staffing levels for example, fits in every sector of Service Delivery for without proper staffing levels, the services cannot be rendered. The goal is to create value-adding strategies. The value chain components may need to be maintained or changed to carry out the strategies. It is the role of strategic managers responsible for developing and managing the strategic plan to ensure the compatibility of pre-service, point-of-service, and after-service strategies (Swayne, Duncan, & Ginter, 2006).

Action Plan:

Each strength and weakness mentioned above will be addressed in a strategic thinking map as a strategic goal. The strategic thinking map, shown in Appendix C will address the strategic goal, determine whether each requires a maintenance or change strategy, and then defines the guidance and priorities for each strategy.

The next step in the implementation strategy is the assignment of the goals within the strategy map to certain individuals or groups of individuals with sequence orders and recommended timelines.

*** Strategic Goal # 1: Customer Support -** A maintenance strategy for the department's customer support (trouble tickets division). The goal will be to continue the current minimal trouble ticket resolution times which provides high ratings of customer service satisfaction while maintaining or increasing the customer support provided by IM departmental staff to its customers at current levels. The goal champion for this strategy is the IM department's contractor manager.

Objectives:

1. To Continue customer support 24 hours a day, seven days a week.
2. To maintain the customer support phone tree.

3. To support both primary and secondary (back-up) technicians for every possible technical scenario through technician cross-training and certifications.

4. To facilitate training of Naval Hospital Jacksonville's staff, in order to reduce the number of initial trouble tickets by a minimum of ten percent per year for the next two years from the goal implementation date.

5. To provide a baseline trouble ticket turn-around time to use for the comparison of future trouble ticket turn-around times.

6. To create metrics and/or reports that allow for continued monitoring and observation of customer satisfaction levels on a monthly basis.

Timeline:

This is a continuous/ongoing strategy with no completion date.

*** Strategic Goal # 2: Staffing Levels -** A change strategy for the department's future staffing levels to align the IM department's staffing levels with that of other IM departments whose size and scope of work are of similar levels. The goal champion for this strategy will be the Information Management Officer.

Objectives:

1. To perform a data collection from similar IM departments throughout the Navy in order to establish a baseline.

2. To identify weak areas due to improper staffing levels.

3. To perform a staffing business case analysis (BCA) as needed to support findings. This BCA should include the staff costs as well as a timeline presentation of which staff are to be acquired at certain intervals.

4. To complete a point paper and present the information to the command's "Total Force" staffing committee in request for appropriate staffing levels.

Timeline:

To be completed three (3) years from the implementation of the strategic plan as follows:

Objective 1. - Three (3) months from plan implementation

Objective 2. - Six (6) months from plan implementation

Objective 3. - 12 months from plan implementation

Objective 4. - 24 months from plan implementation, leaving 12 months for the hiring process.

*** Strategic Goal # 3: Resource Efficiency -** A maintenance strategy for the efficiency of the IM department's resources. The goal champion for this strategy will be the IM departments Chief Information Officer (CIO). The CIO's goal will be to maintain the efficiency of the IM department's resources at optimum operational levels. This objective requires leverage

between cost and value added resources so that the most efficient output is achieved.

Objectives:

1. Ensure the latest technologies are researched and purchased when it comes to hardware and software programs.
2. Complete research previous to purchasing products which are standardized for IM industries.
3. Ensure life-cycle management programs are maintained in place allowing for efficient and justifiable appropriation of needed resources.

Timeline:

To be completed three (3) years from the implementation of the strategic plan as follows:

Objective 1. - This is a continuous/ongoing strategy.

Objective 2. - Six (6) months from plan implementation

Objective 3. - Provide current life-cycle management documentation and make any necessary changes within six (6) months of plan implementation. Review and update life-cycle management plan bi-annually thereafter.

*** Strategic Goal # 4: Scope of Work -** A maintenance and possible change strategy for the IM department's scope of work. The goal champion for this strategy will be the IM department's Project Manager. The goal will be to continuously monitor the scope of

work and make proper determinations as to increasing, decreasing, or maintaining the status quo of projects. This goal, if not well addressed can make the difference between a departmental strength and a departmental weakness. When the scope of work is too large for the IM staffing levels, there is a departmental weakness. Large scopes of projects that can be accommodated by the IM staff support the commands directional strategies hence leveraging a strength of the IM department. Too many additional or special projects which overwhelm the staff, can cause staff burnout and pose a potential weakness. Projects and staffing levels must be leveraged to complete this goal.

Objectives:

1. To maintain a balance between staffing levels and projects that:
   a) Aligns with and/or exceeds industry standards
   b) Provides a challenging environment for the IM department's staff, yet minimizes the risk of "staff burnout"
2. To institute project adjustments by preparing a contingency plan reflecting which projects are essential or additional to the IM department in support of the command's directional strategies.
3. To compare IM projects with those of similar DoD IM departments to establish and maintain industry norms.

Timeline:

Objective 1. - Perform initial assessment of staffing levels and projects and provide report to CIO within six (6) months of strategic plan implementation.

Objective 2. - Prepare contingency plan after objective one (1) has been completed but not later than 18 months from the implementation of the strategic plan.

Objective 3. - This objective should be completed not later than 12 months after completion of objective two (2).

*** Strategic Goal # 5: Workforce Continuity -** A maintenance strategy for workforce continuity. The goal champion for this will be the IM departments Assistant Department Head (ADH). The goal is to maintain continuity and appropriate organizational fit by the retention of valuable and experienced staff.

Objectives:

1. To improve the longevity of civilian employees who are qualified and perform well through employee rewards and recognition programs.

2. To hire experienced and properly credentialed staff for the IM department by filling vacancies with properly trained personnel.

Timeline:

Objective 1. - Objective one (1) is an ongoing objective with no specific timeline.

Objective 2. - Objective two (2) is an ongoing objective with no specific timeline.

*** Strategic Goal # 6: Customer Service Feedback System -**

This is a maintenance strategy for the customer service feedback system. The goal champion for this strategy is the IM department's contractor manager. This maintenance strategy's goal is to continue to improve the current 97 percent positive customer satisfaction rating by 1% within six months by continuously improving the customer service feedback system.

Objectives:

1. Improve the IM departments shared dashboard by developing and attaching a Health Care Effectiveness Data and Information Set (HEDIS)-type measurement tool that relates to IM departments.
2. To solicit customer feedback at regularly established intervals using the current methods mentioned here.
3. To compare positive and negative feedback ratings to other IM facilities as a baseline benchmark until action step one above is completed.

Timeline:

Objective 1. - Completion timeline for this objective is 24 months from strategy implementation.

Objective 2. - Objective two (2) is an ongoing objective with no specific timeline.

Objective 3. - This is an initial benchmark that should be completed within six (6) months of strategy implementation.

Conclusions and Recommendations

No single strategic management plan will fit every Information Management department, as there are too many differences between Information Management sectors. This strategic management plan is specifically developed as a recommendation tool for the internal use of Naval Hospital Jacksonville's IM department. This strategic analysis and its goals are specifically intended as recommendations to assist the IM department in support of Naval Hospital Jacksonville mission, vision, and goals. This strategic analysis is not intended to create a separate set of directional strategies for the IM department.

As with all long-term strategic management plans, the courses of action recommended may need to be modified depending on the external environmental factors that affect them. Recommendations for this plan include the re-evaluation of the action steps at six-month intervals throughout the course of the strategic plan.

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Appendix A - Portfolio (1) Systems Supported by Information Management

SYSTEM	ACRONYM	VERSION	DESCRIPTION
AHLTA	**AHLTA**	837.9	The main computer system utilized to record patient encounters/visits and creates an electronic medical record.
AUDIO CARE (Pharmacy)			A pharmacy refill system and the electronic appointment reminder system which calls patients to remind them they have an appointment.
Automated Central Tumor Registry System	**ACTUR**	6.1.0	Registers and tracks patient records, treatment, outcomes and other data for cancer patients. Local user interfaces with the central DEERS database in Bethesda.
Clinical Information Portal	**CIP**		
Answer Tree		3.1	Statistical application that supports decision making using a tree flowcharting process.
CARE ENHANCE CALL CENTER	**CECC**	3.0 SP 6	Nurse triage application that allows nurses to triage patient complaints and offer medical advice following a standard physician approved protocol. Interface to CHCS exists but has not been approved for use by the govt.
Coding Compliance Editor	**CCE**		Inpatient and Outpatient audit system for coders, interfaces with CHCS II
Clinical Decision Support System	**CDSS**		
Composite Health Care System Application	**CHCS**	4.63	Legacy Medical System
CHCS SAS	**CHCS BOBJ**	Cache 4.1.6	CHCS Cache Reporting Tool and Shared Applications Service
CHCS HARDWARE			Devices Interfaced to Work with CHCS
CHCS PERSONA		5	CHCS Web Access
CHCS SAM			Script-based Active Monitor of CHCS Processes
CHCS SOFTWARE		7.3	Digital Standard Mumps Programs Loaded on CHCS
CHCS Tricare Online	**CHCS TOL**	Oracle 9i	MHS Web Site Beneficiary Health Information and Communications Service
CHCS TOL Web Pages	**TOL**	None	MHS MTF Provider Personal Health care Medical Information Homepage

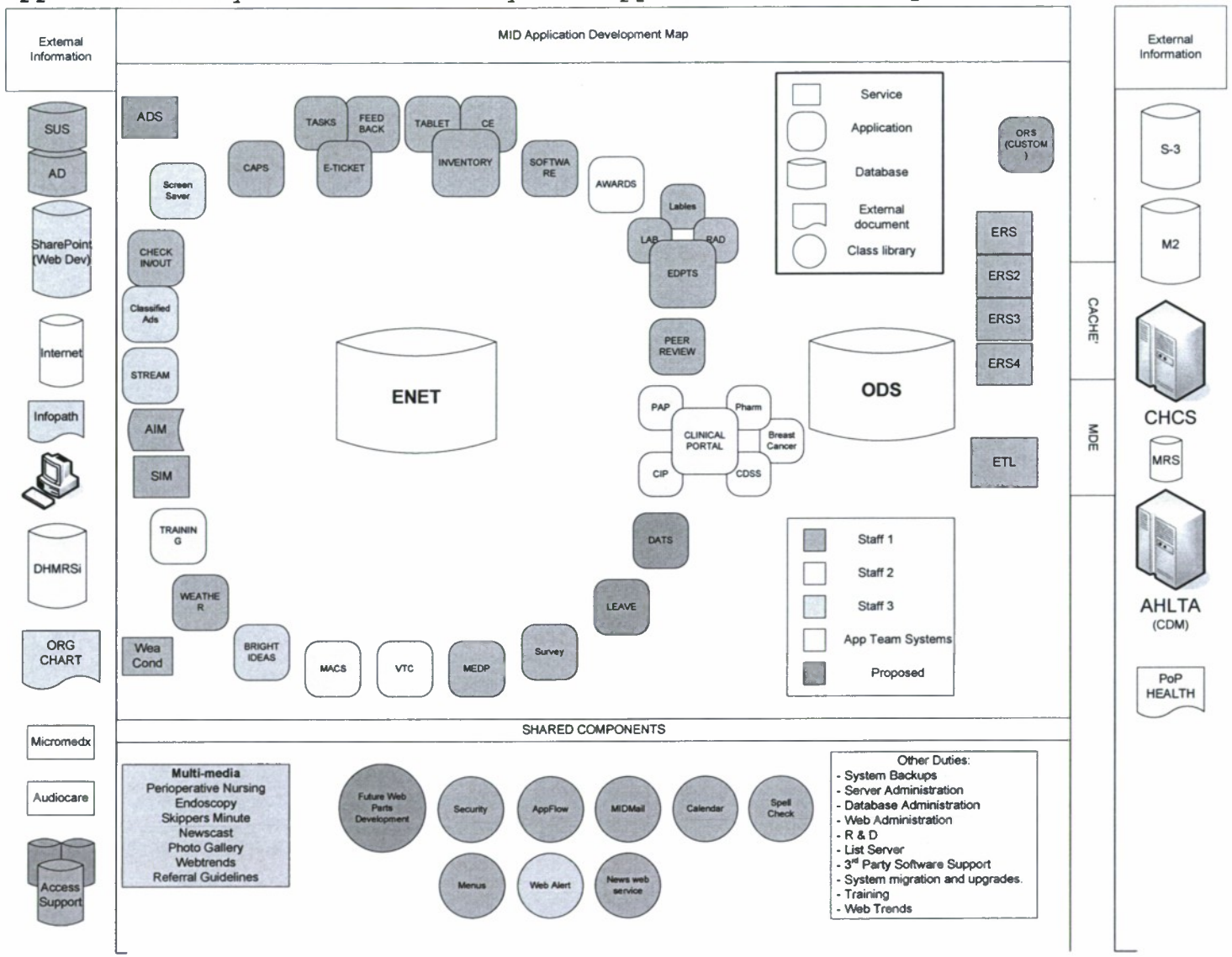
Defense Blood Bank Standard System	**DBSS**	3.04	The DBSS is a Food and Drug Administration (FDA)-regulated, Class II Medical Device designed to handle blood collection, processing and tracking procedures, and automation of standards and safeguards for the blood supply. DBSS is interfaced to CHCS from which it receives orders and to which it sends results.
Data Innovations Inc.	**DII XP**	V4.05E	CHCS Lab Interface Manager
Defense Medical Human Resource System internet	**DMHRSi**		A web-based system that is designed to manage all human resources - military, civilian, volunteer, contractor, assigned, or borrowed personnel and standardize the capture and measurement of human resource usage across the MHS.
Defense Medical Logistics Standard Support	**DMLSS**	3.05.b125.x.14	The standard DoD medical logistics system enabling health care providers to deliver cost-effective, state-of-the-art health care to patients world-wide.
Defense Travel System	**DTS**		Website the traveler uses to generate travel authorizations, make trip reservations, and route travel requests for approval. Creates a voucher and electronically routes travel clain for approval and submission to the DFAS, PKI certificates required for digital signatures
Dental Common Access System Remote	**DENCAS**	4	Tracks dental readiness and productivity and interfaces with SAMS IMR lite and the DENCAS website for live data.
Expense Assignment System	**EASIV**	2.6.0.3	A management support tool that provides standardized workload, expense and manpower data by the DoD at the MTF and DTF levels.

EXCHANGE / E-MAIL / NETWORK		2003	Email using Microsoft Exchange Server 2003 and Active Directory for network accounts.
Funds Admin & Standardized Document	**FASTDATA**	3.1	automation and standardization for accounting record keeping.
GIQD (NDEERS)		12	Direct interface with DEERS/RAPIDS systems. Used by Record Room Supervisors, Enrollment Personnel and DEERS Coordinator
HIV Management System Loader	**HMS LOADER**	1	Is a web browser-based application for the manual and electronic entry and the submission of blood specimen demographic information.
INTERNET Webmaster			Naval Hospital Web site for its patients and families.
INTRANET FORMS			
INTRANET WEBMASTER			

WEB APPLICATIONS			
Medical Board Online TriService Tracking	MedBOL/TT	Web	Used for tracking all aspects of medical boards.
MHS Mgmt, Analysis & Reporting Tool	M2	Bus Obj 5.1.7	An analytic tool to support analysts in the conduct of studies to support MHS leadership in the management and oversight of MHS operations.
Modern Defense Civilian Personnel Data System	MODERN DCPDS	Oracle 11i	Performs electronic processing of personnel actions and training requests, automated job classification, a database of employee, position, and organizational data that supports civilian personnel operations.
Nutrition Management Information System	NMIS		
*OBTV (Fetal Monitoring)			IRMD provides storage for backup disk only
RALS Plus			
Shipboard Non-tactical ADP Program Automated Medical System	SAMS	8.03	Documents medical encounters, tracks radiation exposure data, monitors environmental conditions that may affect the health of military personnel (such as heat stress monitoring, potable water testing, and pest control), monitors women's health, and tracks individual and unit medical and dental readiness interfaces with dencas.
Std Labor Data Collection/Distribution Application	SLDCADA	Web	A timekeeping system that allows for centralized or distributed input, provides the capability to track civilian, military, as well as contractor labor hours against job order numbers for financial purposes, and hours against type hour codes for pay purposes.
Standard Personnel Management System	SPMS	5.1	This is an on-line menu-driven program that provides an interactive, automated capability to manage operation, planning, programming and budgeting in the functional areas of personnel, education and training, mobilization and expense distribution.
Standard Procurement System – PD2	SPS-PD2	4.2	Automates and streamlines the procurement process and ties the logistical, contracting and fiscal aspects of procurement into enterprise business system.
Standard Procurement System – PMRS	PMRS	Web	Procurement Management Reporting System
Statistical Products & Services Solutions, Inc.	SPSS	12	A desktop statistics product for data management, customized output, and charts.
Third Party Outpatient Collection System	TPOCS	3.1	Stores patient and billing information, manages administrative billing information throughout the billing lifecycle, and generates reports to support administrative reporting requirements.
Wide Area Workflow Receipt & Acceptance	WAWF-RA	Web	A secure Web-based system for electronic invoicing, receipt and acceptance.

Windows Automated Travel Order System	**Win ATOS**	045-01.00.01	Allows business travelers to create, print, and save trip requests, travel vouchers, and SF 1164's.
Workload Management System for Nursing	**WMSN**	4.1	Performs patient classification, staffing lookups, workload analysis and acuity updates so adequate nursing staff is scheduled to handle patient requirements on all wards except ICU and PEDS.

Appendix B - Systems Provided by the Applications Development Team



Appendix C. Strategic Management Plan Snapshot / Summary Page

Naval Hospital Jacksonville, FL
Information Management Department
Strategic Plan – June 2009

MISSION

We are a service organization! We provide operational support, promote wellness, and deliver quality health care to all those entrusted to us, anytime, anywhere.

VISION

First in Service! Through Readiness, Staff Development, and Family Centered Care, we will be the Most Efficient Organization.

VALUES STATEMENTS

1) Supporting Operational Readiness 2) Patient Centered Quality Health Care 3) Focusing on Staff 4) Promoting Sound Business Practice

STRATEGIC GOALS

Customer Support	Staffing Levels	Resources Efficiency	Scope of Work	Workforce Continuity	Customer Service Feedback System
Maintain	**Change**	**Maintain**	**Maintain / Change**	**Maintain**	**Maintain**
MAJOR PRIORITIES					
1. Continue 24X7 support 2. Maintain primary and secondary systems support staff 3. Maintain minimal trouble ticket resolution times 4. Continue staff training 5. Maintain customer support phone tree	1. Identify weak areas due to staffing level 2. Collect staffing data from similar DoD IMD's 3. Perform staffing BCA 4. Request for appropriate staff levels	1. Maintain latest technologies in software 2. Up-keeping of lifecycle management program 3. Standardize products	1. Prepare a project contingency plan 2. Maintain balance between staffing levels and projects while: a) maintaining or exceeding the industry standards b) reducing risk of staff burnout	1. Maintain longevity of high caliber personnel through recognition programs 2. Continue to seek & hire experienced and credentialed personnel	1. Continue to monitor customer feedback 2. Improve IM dashboard by attaching HEDIS type measurement tool 3. Continue to solicit customer feedback